

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-20 (Canceled).

Claim 21 (Currently Amended): An Ig antigen-binding fusion protein comprising (1) an antibody and (2) a peptide consisting of SEQ ID NO: 1 having homophilic activity,

wherein the peptide antibody is specific for cellular receptor and the peptide is derived from human C3d region 1217-1232 binding to CR2 receptor on B cells; a specific binding site derived from a natural ligand for a specific cellular receptor;

wherein the antibody is a murine anti-idiotype antibody 3H1 and the peptide is a complement fragment C3d; and

wherein the peptide does not interfere with antigen binding.

Claim 22 (Currently Amended): The Ig antigen-binding fusion protein of Claim 21 wherein the antibody comprises a light chain and/or a heavy chain immunoglobulin molecule and wherein the peptide is fused attached to the C-terminal or the N-terminal end of said light chain or heavy chain immunoglobulin molecule.

Claim 23 (Currently Amended): An Ig antigen-binding fusion protein comprising (1) an antibody and (2) a peptide consisting of SEQ ID NO: 1 having homophilic activity; wherein the peptide antibody is specific for cellular receptor and the peptide is derived from human C3d region 1217-1232 binding to CR2 receptor on B cells; a specific binding site derived from a natural ligand for a specific cellular receptor; wherein the antibody is a murine anti-idiotype antibody 3H1 and the peptide is a complement fragment C3d; wherein said peptide does not interfere with

antigen binding; and wherein the fusion protein is created by a process comprising the steps of:

creating a vector nucleic acid fusion product comprising a nucleic acid sequence encoding said an anti-idiotype antibody 3H1 and a nucleic acid sequence encoding said peptide, such that the nucleic acid sequence encoding the peptide is located inside internally to the nucleic acid sequence encoding the antibody, and such that the peptide is connected to the antibody at a site that does not interfere with antigen binding, and

expressing the nucleic acid fusion product to create the fusion protein.

Claim 24 (Currently Amended): The Ig antigen-binding fusion protein of claim 21, wherein said antibody is an antibody that mimics carcinoembryonic antigen specific for a cellular receptor on a normal cell or on a tumor cell.

Claim 25 (Currently Amended): The Ig antigen-binding fusion protein of claim 21, wherein said antibody is a full-length immunoglobulin molecule or an antigen binding fragment thereof a variable domain containing fragment of an antibody.

Claim 26 (Currently Amended): The Ig antigen-binding fusion protein of Claim 21 wherein said peptide has inverse hydropathicity within the length of said peptide.

Claim 27 (Currently Amended): The Ig antigen-binding fusion protein of Claim 21, wherein said antibody comprises a light chain and or a heavy chain immunoglobulin molecule and wherein said peptide is localized internally to said light chain or heavy chain immunoglobulin molecule.

Claim 28 (Currently Amended): An Ig antigen-binding fusion protein comprising (1) an antibody and (2) a peptide consisting of SEQ ID NO: 1 having immuno-stimulatory activity; wherein the peptide antibody is specific for cellular receptor and the peptide is a specific binding site derived from a natural ligand for a

specific cellular receptor; wherein the antibody is a murine anti-idiotype antibody 3H1 and the peptide is a complement fragment C3d; wherein said peptide does not interfere with antigen binding; and wherein said antibody comprises a light chain and or a heavy chain immunoglobulin molecule and wherein said peptide is attached to the C-terminal or the N-terminal of said light chain or heavy chain immunoglobulin molecule.

Claim 29 (Canceled).

Claim 30 (Currently Amended): The Ig antigen-binding fusion protein of Claim 28, wherein said antibody comprises a light chain and or a heavy chain immunoglobulin molecule and wherein said peptide is localized internally to said light chain or heavy chain immunoglobulin molecule.

Claim 31 (Currently Amended): The Ig antigen-binding fusion protein of claim 28, wherein said antibody is an antibody that mimics carcinoembryonic antigen specific for a cellular receptor on a normal cell or on a tumor cell.

Claim 32 (Currently Amended): An Ig antigen-binding fusion protein comprising (1) an antibody and (2) a peptide consisting of SEQ ID NO: 1 having membrane transport activity; wherein the peptide antibody is specific for cellular receptor and the peptide is derived from human C3d region 1217-1232 binding to CR2 receptor on B cells; a specific binding site derived from a natural ligand for a specific cellular receptor; wherein the antibody is a murine anti-idiotype antibody 3H1 and the peptide is a complement fragment C3d; and wherein said peptide does not interfere with antigen binding.

Claim 33 (Currently Amended): The Ig antigen-binding fusion protein of Claim 32, wherein said antibody comprises a light chain and or a heavy chain immunoglobulin molecule and wherein said peptide is attached to the C-terminal or the N-terminal of said light chain or heavy chain immunoglobulin molecule.

Claim 34 (Currently Amended): The Ig antigen-binding fusion protein of Claim 32, wherein said antibody comprises a light chain and or a heavy chain immunoglobulin molecule and wherein said peptide is localized internally to said light chain or heavy molecule.

Claim 35 (Currently Amended): The Ig antigen-binding fusion protein of claim 32, wherein said antibody is an antibody that mimics carcinoembryonic antigen specific for a cellular receptor on a normal cell or on a tumor cell.

Claim 36 (Canceled).

Claim 37 (Currently Amended): The Ig antigen-binding fusion protein of Claim 22, wherein said peptide is a 16mer peptide derived from a human ~~or non-human~~ C3d region homologous to the human C3d residues at position 1217-1232.

Claim 38 (Currently Amended): The Ig antigen-binding fusion protein of Claim 29, wherein said peptide is a 16mer peptide derived from a human ~~or non-human~~ C3d region homologous to the human C3d residues at position 1217-1232.

Claim 39 (Canceled).

Claim 40 (Currently Amended): The Ig antigen-binding fusion protein of Claim 33, wherein said peptide is a 16mer peptide derived from a human ~~or non-human~~ C3d region homologous to the human C3d residues at position 1217-1232.